Special Issue

Enhanced Properties of Materials by Surface Peening and Modification Technologies

Message from the Guest Editor

Surface peening and modification technologies are applied to various materials to improve the various properties in a wide range of applications via surface severe plastic deformation (S2PD) thanks to grain size refinement and induced compressive residual stress. In addition, they change the phase composition of materials, which is essential for improving their mechanical properties, wear resistance, corrosion resistance, fatigue endurance, etc. Hence, this SI elaborates on the recent innovations in S2PD-based technologies such as shot peening, laser peening, ultrasonic nanocrystal surface modification, ultrasonic surface rolling process, water jet peening, cavitation peening, etc. In particular, this SI focuses on assessing the impact of laser- and ultrasonic-based S2PD technologies on microstructural changes, mechanical properties, wear resistance, corrosion resistance, fatigue endurance, etc. Numerical analyses of surface peening and modification technologies will also be considered.

We invite researchers from all over the world to submit their original research papers or review articles. Moreover, this SI welcomes interesting research papers from the 8th ICLPRP.

Guest Editor

Dr. Auezhan Amanov
Department of Mechanical Engineering, Sunmoon University, Asan 31460, Republic of Korea

Deadline for manuscript submissions

closed (20 April 2025)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/181600

Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

mdpi.com/journal/materials

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

About the Journal

Message from the Editorial Board

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editors-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Prof. Dr. Yuguang Ma
State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)

MDPI